

POLAND/Atomic and Molecular Physics - Statistical Physics.  
Thermodynamics

D-3

Abs Jour : Ref Zhur - Fizika, No 10, 1958, No 22586

Author : Marks J.

Inst : Physics Institute for Vacuum Tubes PIE, Poland

Title : Determination of the Melting Temperature and Speed of  
Evaporation of Metallic Barium.

Orig Pub : Elektronika, 1957, 3, No 12, 57

Abstract : The determination of  $T_m^2$  of various samples of barium with  
pure (I) and oxidized (II) surfaces gave a value of  $T_m^2$   
740 to 750°C for I and 770 to 790°C for II. For measurements  
of  $T_m^2$  and also from the measurement of the speed of evapora-  
tion of barium from a crucible with an opening (at tempera-  
tures of 350 to 650°C), it is concluded that the barium  
employed contained impurities.

Card : 1/1

41659  
S/058/62/000/0:0/087/093  
A061/A101

26. 2. 5<sup>d</sup>  
AUTHORS: Nesteruk, Konstanty, Marks, Jerzy, Czarycki, Wenancjusz

TITLE: Pressed and dispersed getters

PERIODICAL: Referativnyy zhurnal, Fizika, no. 10, 1962, 15, abstract 10-3-3Cs  
('Prace Przemysł. inst. elektron.', 1960, v. 1, no. i, 78 - 79,  
Polish)

TEXT: A number of improvements have been made in recent years in the production of dispersed barium getters. Pressed getters deserve special attention; in them, the barium source is a Ba-Al<sub>14</sub> compound which is resistant to atmospheric action, while its relatively high melting point permits good degassing of the getter prior to its flash. The addition of nickel powder exerts an additionally favorable effect on the barium flash process, and facilitates the pressing of the getter material in an annular shell. The annular shape is very advantageous from the viewpoint of the tube geometry, the possibility of obtaining a uniform and directional mirror, and the gradual barium flash. A fabrication technique for getters of this type is developed. Their principal characteristics and the absorption rate in a vacuum of

Card 1/2

Pressed and dispersed getters

S/056/52/000/010/05//13;  
A061/A101

$\sim 10^{-5}$  mm Hg are determined as functions of the mirror temperature and the kind of gas. The results obtained show that the action of the getters under consideration is more effective than that of getters of the types Fe-Ba, Ni-Ba, etc. The investigation results have found confirmation in the industrial practice of electron tube manufacture.

I. N.

[Abstracter's note: Complete translation]

Card 2/2

41660

S/058/62/000/010/088/093  
A061/A101

AUTHORS: Nesteruk, Konstanty, Marks, Jerzy

TITLE: Technology of the "Ceto" getter

PERIODICAL: Referativnyy zhurnal, Fizika, no. 10, 1962, 15 - 16, abstract  
10-3-30yu ("Prace Przemysl. Inst. elektron.", 1960, v. 1, no. 1,  
79 - 80, Polish)

TEXT: The "Ceto" getter has been the object of constant studies and improvements for a number of years. Some stages of its fabrication process have been examined, and its sorption properties with respect to a number of gases ( $\text{CO}_2$ ,  $\text{H}_2$ ,  $\text{O}_2$ , and  $\text{N}_2$ ) in the 100 - 500°C range have been determined. It has been established that the use of pure initial materials and the performing of sintering and activation processes in high vacuum reduces the time, and lowers the temperature, of these processes. A highly active getter is obtained when these conditions are complied with. The addition of some per cent of titanium hydride to a mixture of Th powders with a misch metal - aluminum (or Ce-Al) alloy is very expedient, since a getter being very active at temperatures of 200 - 300°C is then obtained.

I. M.

[Abstracter's note: Complete translation]

Card 1/1

S/194/62/000/010/034/084  
A064/A126

AUTHORS: Nesteruk, Konstanty, Marks, Jerzy

TITLE: Technology of the Ceto gas-absorber

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 10, 1962,  
15 - 16, abstract 10-3-30yu (Prace Przemysł. inst. elektron., 1960,  
v. 1, no. 7, 79 - 80; Polish)

TEXT: For several years now the Ceto gas-absorber is an object of constant investigations and improvements. Certain stages of its production process have been investigated and there were indicated definitions of its absorption qualities relative to a number of gases ( $\text{CO}_2$ ,  $\text{H}_2$ ,  $\text{O}_2$  and  $\text{N}_2$ ) in the temperature range of 100 - 500°C. It was established that the use of originally clean materials and the execution of baking processes and activation in a high vacuum reduces the time and lowers the temperature of the processes; by observing these conditions one obtains gas-absorbers possessing a great activity. The addition of a few % of titanium hydride to the mixture of thorium powder with mischmetal-aluminum (or Ce-Al) is very economic. Since by doing this one obtains a gas-absorber very active

Card 1/2

Technology of the Ceto gas-absorber

at 200 - 300°C.

S/194/62/000/010/034/0004

A064/A126

I.M.

[Abstracter's note: Complete translation]

Card 2/2

S/194/62/000/010/032/084  
A064/A126

AUTHOR: Marks, Jerzy

TITLE: Micro-analysis of gases from materials used in vacuum technology

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 10, 1962,  
10 - 11, abstract 10-3-20yu (Prace Przemysł. inst. elektron., 1961,  
v. 2, no. 3, 50 - 63, Dyskus., 63 - 64; Polish; summaries in Eng-  
lish, Russian)

TEXT: When electro-vacuum instruments are built it is very important to  
know the quantity and the composition of the gases contained in the materials  
used, either in dissolved (bound or free) condition, or in the form of surface-  
adsorbed layers. The determination of the absolute quantity of gas is a rather  
difficult problem, which is usually solved by casting the material in a vacuum,  
but what is not always economic. The biggest problem is presented by the deter-  
mination of the quantity of gas emitted during operation or at permissible limit  
conditions and its change in time, which is of great importance when determining  
the optimum technological rate. During measuring, the sample of the investigated

Card 1/2

Micro-analysis of gases from materials used ....

3/194/62-66.1117-1  
A064/A126

material is heated in a vacuum at a corresponding temperature in such a way that, after a given time interval, a complete removal of the isolated gases is ensured, e.g., by pumping. The micro-analysis is done by gradual removal of the various components: e.g., water vapors are removed by freezing out at the temperature of a mixture of solid carbon dioxide with acetone; the carbon dioxide - at the temperature of liquid nitrogen; the oxygen by means of a platinum spiral; carbon monoxide and hydrogen united with each other in the presence of copper oxide which reappears by heating to 350°C; the remaining gases contain nitrogen, i.e., gases and hydrocarbons. All these methods are employed in the installation adopted by the Institute of Industrial Electronics (EIP - PNR). Test results are given for the following materials: anti-magnetic OH 13N 9 chromium steel (used for manufacturing standard lamp parts in the form of rings); armco steel (used in particular in tanks for barium gas absorber of the AlNiBa type); nickel powder for thermocathodes and gas absorbers, and also for ceramic lamp materials.

N.S.

[Abstracter's note: Complete translation]

Card 2/2

NESTERUK, Konstanty, MARKS, Jerzy

"Ceto" getter with increased activity. Przegl elektroniki 3  
no.9:512-513 S '62.

1. Przemyslowy Instytut Elektroniki, Warszawa.

P/053/62/000/011/001/004  
E071/E392

AUTHOR: Marks, Jerzy

TITLE: Processes of the evolution of gas from glass

PERIODICAL: Prezglad elektroniki, no. 11, 1962, 640 - 643

TEXT: The amount of gases evolved from different types of glass was studied. Samples of soda, lead and borosilicate glass [1) washed with petrol and alcohol and dried in air at 60 °C, 2) washed with chromic acid mixture, 3) washed with a 1% solution of hydrofluoric acid and 4) heated in dry air at 450 °C for 1 h] were heated at 100, 200, 300 and 400 °C, until the evolution ceased, and at 500 °C for 1 h. The evolved gases were stored at constant volume, measuring the corresponding changes in pressure. Brief experimental data are included. The gas evolved contained in all cases 90-95% H<sub>2</sub>O, 3-6.5% CO<sub>2</sub> and 1-3% N<sub>2</sub>. Glass washed with hydrofluoric acid and heated in air to 450 °C for 1 h had considerably less adsorbed gases than that washed by the other two methods. It was established that once a glass sample was heated in air at 450 °C it could be stored for some time (period tested up to 2 weeks) in air of about 50% humidity at room temperature

Card 1/2

Processes of ....

P/053/62/000/011/001/004  
E071/E392

without a significant readsorption of gases. It is concluded that this method of degassing can be used in practice. There are 3 figures and 1 table.

ASSOCIATION: Przemysłowy Instytut Elektroniki  
(Industrial Institute for Electronics)

Card 2 /3

NESTERUK, Konstanty; MARKS, Jerzy

Pressed barium getters. Przegl elektroniki 4 no. 2: 96-98  
'63.

1. Przemyslowy Instytut Elektroniki, Warszawa.

SWATON, Stefan; MARKS, Ludwik

Dysostosis cleido-cranialis. (Description of a case). Polski  
przegl.radiol. 24 no.4:211-215 '60.

l. z Pracowni Rtg Szpitala MSW we Wrocławiu Kierownik: dr  
W.Bobrowski i z Oddz. Chor. Wewn. Szpitala MSW we Wrocławiu  
Ordynator: dr A.Pacyński  
(CLEIDOCRANIA DYSOSTOSIS case reports)

MARKS - L.A.

Card 2 / 27

**APPROVED FOR RELEASE: 06/14/2000**

CIA-RDP86-00513R001032520010-7"

MARKS, V.A.

Metamorphism of rocks enclosing the Mauk pyrite deposit in  
the Central Urals. Trudy Gor.-geol. inst. UFAN SSSR no.34:  
47-56 '58. (MIRA 14:10)  
(Ural Mountains—Pyrites)

MARKS, V.A.

Blue-green hornblende of metamorphic rocks. Zap. Vses. mit. et. et.  
92 no. 2:230-236 '62. (MIA 10/1)

1. Gornogeologicheskiy institut Ural'skogo filiala AN SSSR,  
Sverdlovsk.

(Kasli District--Hornblende)  
(Kasli District--Rocks, crystalline and metamorphic)

MARKS, V.A.

The blue-green hornblendes of metamorphic rocks. Analele geol geogr  
17 no.2:68-74 Ap-Je '63.

MARKS, V.O.

[Examining on orthopedic patient] Issledovanie optopedicheskogo  
bol'nogo. Minsk, Gos. izd-vo BSSR, 1956. 382 p. (MLRA 9:10)  
(ORTHOPEDIA)

MARKS, V.O.

Treatment of ununited fractures of the olecranon process. Vest.  
Khir. 84 no.6:124-126 Je '60. (MIR 13:12)  
(ELBOW--FRACTURE)

~~MARKS, Vasiliy Oskarovich, prof.; MANINA, L., red.; SIDERKO, N.,~~  
~~tekhn. red.~~

[Healing of the closed bone fracture] Zazhivlenie zakrytogo  
pereloma kosti. Minsk, Izd-vo Akad. nauk BSSR, 1962. 281 p.  
(MIRA 15:11)  
(FRACTURES)

GONCHARIK, M.N.; GLETEN'YA, I.P.; MARKOCHAKOVA, M.I.

Daily variations of carbohydrates in leaves and stalks of  
potato plants. Part 1. Bull. etc. VBl no.5; R-15 192.

(MIRA 101)

MARKSHAYTIS, G.N.

On  $p$ -extensions with a single critical number. Izv. AN SSSR. Ser. mat.  
27 no.2:463-466 Mr-Ap '63.  
(Fields, Algebraic) (Groups, Theory of)

MARKS-ZAKRZEWSKA, A.; LAPINSKI, A.; FILIPOWICZ, A.; GRABOWSKA, U.; RENKIELSKA, H.; WITKOWSKA, B.

Significance of agglutination reactions in dysentery in children. Pediat. polska 34 no.2:145-152 Feb 59.

1. Z II Kliniki Chorob Dzieci A. M. w Gdansku Kierownik: doc. dr med. A. Marks-Zakrzewska i z Wojewodzkiej Stacji Sanitarno-Epidemiologicznej w Gdansku Dyrektor: dr med. A. Lapinski. Adres: Doc. dr med. Marks- Zakrzewska, Warszawa, ul. Sienna 60.

(DYSENTERY, BACILLARY, in inf. & child,  
fecal agglut. test (Pol))

(AGGLUTINATION,  
Shigella agglut. test of feces in dysentery in child. (Pol))

**MARKS-ZAKRZEWSKA, Aniela; POLTYN, Halina**

Idiopathic hemosiderosis of the lungs. Pediat.polska 35 no.1:  
57-68 Ja '60.

1. Z II Kliniki Chorob Dzieci A.M. w Gdansku. Kierownik: doc.dr.  
med. A. Marks-Zakrzewska.

(HEMOSIDEROSIS in inf.& child.)  
(LUNG DISEASES in inf.& child.)

MARYSON, I. I.

"The Demands made with Respect to the Representation of Soil Vegetation  
on Large Scale Topographical Maps."

report presented at the Scientific and Technical Conference, Novosibirsk Inst.  
of Engineers of Geodesy, Aerial Photography and Cartography, 15-22 Feb 58.  
(Geodeziya i Kartografiya, '58, 4, 79-80)

MARKSON, P.I.

6

SAVEL'YEV, A.P., BORISOV, A.M., VOL'NOV, YE.O., LITVIN, A.P.,  
MARKSON, P.I., BILEN'KAYA, YE.L., BURMISTROVA, R.S.

Production of high purity ethylene.

Report presented to the 12th Conference on high molecular weight  
compounds, devoted to the monomers, 3-7 April 62

MARKSOO, Ago; LAANEP, E., red.; LIIVAND, T., tekhn. red.

[Estonian S.S.R.] Eesti NSV. Tallinn, Eesti Riiklik  
Kirjastus, 1961. 86 p. (MIRA 15:2)  
(Estonia—Description and travel)

MARKTSEV, P.

MARKTSEV, P. Universal feeding and drinking trough for calves. Tr.  
from the Russian. p. 31. Vol. 11 no. 12, Dec. 1956 KOOPERATIVNO  
ZEMEDELIE. Sofia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol. 6 No. 4 April 1957

GAVRILOV, V.; MAR'TSEV, V., instruktor

Principle of public participation in the work of financial organs. Fin. SSSR. 23 no.1:53-56 Ja '62. (MIRA 15:2)

1. Nachal'nik shtatnogo otdela Kuybyshevskogo gorodskogo finansovogo otdela (for Gavrilov). 2. TSentral'nyy komitet profsoyuza rabotnikov gosuchrezhdeniy (for Marktsev).  
(Finance)

MARKTSEV, V.

Plenum of the Central Committee of the Trade Union of Employees  
of Government Enterprises. Fin. SSSR 22 no.4:82-85 Ap '61.  
(MIRA 14:4)

(Trade unions--Congresses)  
(Agriculture--Finance)  
(Socialist competition)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7

MARKTULKOV, S.

(Radio engineering; text-book) Sofiia, Narodna prosveta, 1951-52. 2 v. (52-39650 rev.)

TK6500.M324

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7"

MARKU, Bernard, ing.; MICHAEL, Emil, ing.; PALADE, Ionel, ing.; BOGOC, Anatolii, ing.

Compensating the cement industry peak load. Iarai energie 5  
no.3:68 M '64.

MARKU, K.

MARKU, K. "Investigation of the Process of Formation of Insoluble Azo-Dyes on Fabrics During Printing." Min Higher Education USSR. Moscow Textile Inst. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Science)

So:Knizhnaya Letopis', No. 18, 1956,

SADOV, F.I.; MARKU, K.

Maximum yield of insoluble azo dyes in printing. Tekst. prom.  
20 no. 11:48-50 N '60. (MIRA 13:12)  
(Textile printing) (Azo dyes)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7

M. Reh 11-10-1986

Central Intelligence Agency  
Washington, D.C. 20507

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7"

CC-KTP : 51-111-1A  
2000-0001 : 1-001-00

ABT, J. P.: *J. Acoust. Soc. Amer.*, 39, 4, p. 105-110, 1966.

ADVISOR DR. JAMES H. BROWN

1881-1912  
11-26-6

130

**Abstract** This paper presents a new approach to the problem of estimating the parameters of a linear system from noisy data. The approach is based on the use of a non-linear optimization technique called the "Levenberg-Marquardt" method. The method is used to find the best fit of a linear model to the data, and the resulting parameters are then used to estimate the true parameters of the system. The proposed method is shown to be more accurate than traditional methods, such as the least squares method, in the presence of noise.

Card:

MARKULIS, H.

Conference of petroleum geologists. Przegl geol 11 no.5:  
249 My '63.

MARKULIS, I. I.

"The Embryogenesis of the Dorsal Visceral Nucleus of the Vagus Nerve in  
Rabbits and Humans." Cand Med Sci, Inst of Physiology, Acad Med Sci USSR,  
Leningrad, 1953. (RZhBiol, No 2, Sep 53)

Survey of Scientific and Technical Dissertations Defended at USSR Higher  
Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

MARKOV, A. V.

Markov, A. V. - "Photometric investigations of the eclipse of the Sun of 15 August 1913", Pogolitens' Fizik. zhurn., Vol. 17, No. 4, 1914, p. 494-98.

SO: U-3742, 11 March 53, (Letter to Zhurnal Vysok Statyy, No. 4, 1914).

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7

MARKULOV, IGOR' ALEKSEYEVICH

b7  
667.1  
.M5

GAZOVAYA TURBINA (THE GAS TURBINE) M SKVA, GOSTEKHIZDAT, 1951.  
54 P. ILL'S., DIAGRS. (NAUCHNO-P P LARNAYA BIBLIOTEKA, VYP. 94)

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7"

MARKULOV, N.Ya.  
F

A

3559. WORKING TESTS OF COMBINE UTR-1 ON THIN SPADS OF D.Z. Tsyshko.  
FILED. Markulov, N.Ya. and Vedernikov, V.I. (Mechanizatsiya Truda i Tsvetnoy Metallicheskoy Rabot (Mechanization of arduous Work), A.S.R. 1951, 31-34).

L-34836-65 EMT(1)/EWA(b) JK

ACCESSION NR. AP5008536

S/0286/55/000/006/0047/0047

20

18

AUTHOR: Markulov, V. P.; Epshteyn, A. B.; Velikiy, I. D.; Nikiforova, N. N.

TITLE: A device for concentrating microbes. Class 30, No. 169201

SOURCE: Byulleten' izobreteni i tovarnykh znakov, no. 6, 1965, 47

TOPIC TAGS: microbiology, microbe concentration

ABSTRACT: This Author's Certificate introduces a device for concentrating microbes. The unit is made in the form of a vessel with a steam jacket, a cover, a pressure transfer tube, a tube for a thermometer and inspection ports. In order to increase the compressibility of the microorganisms during their separation from the liquid phase, at the bottom of the device is a vacuum chamber which has a pressure transfer tube and is separated from the upper part of the vessel by a layer of aluminum hydroxide. The Author's Certificate also covers two modifications of this device: 1. a unit equipped with an electromagnetic agitator for stirring up the microbe mass filtered out in the aluminum hydroxide; 2. a unit equipped with an air filter (e.g. cotton) with a steam jacket and a small autoclave with a steam jacket in order to assure sterility.

Card 1/4

MARKUL'VA, O.S.

Nervous System

Effect of stimulation of interocentors or skeletal muscles in man on his motor and sensory domination. Fiziol. Zhurn. 37 no. 1, 1951.

Monthly List of Russian Accessions, Library of Congress, April 1952, UNCLASSIFIED

1. DOLINA, L. P. and MARKUNSKIY, V. S.
2. USSR (600)
4. Bragunskiy Range - Geology, Structural
7. Report on the activities of the electric geophysical exploration party No. 3/44 and the magnetometric party No. 7/44 in the region of the western submergence of the Bragunskiy Range. (Abstract.) Izv.Glav.upr.geol.fon. no. 3, 1947.
9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

L 08533-67 EWT(1) GW  
ACC NR: AP6035597

SOURCE CODE: UR/0387/66/000/010/0040/0047

33

B

AUTHOR: Vashchilov, Yu. Ya.; Markunskiy, V. S.

ORG: Geology Department, Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet. Geologicheskiy fakul'tet)

TITLE: Method of gravimetric investigation of a layered block structure of the Earth's crust

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 10, 1966, 40-47

TOPIC TAGS: earth crust, gravity anomaly, ~~contamination~~, Mohorovicic discontinuity, geologic structure/~~Ciscaucasia~~.

ABSTRACT: Using Ciscaucasia as a test area, a method of interpreting gravity observations, based on an assumed layered block structure of the Earth's crust, is proposed for investigating the deep-seated structure." The method makes no use of seismic data but is based on the use of log-log function charts for the determination of the lower edges of bodies in the form of parallelepipeds from  $\Delta g$  anomalies and the statistical processing of the results obtained. After the depths of the lower edges have been determined, polygons or histograms of their distribution are constructed for three cases: 1) where the upper edge of the disturbing bodies coincides with the roof of the folded basement, 2) where the upper edge is on the observation surface and local salt-dome tectonics have been taken into account, and 3) where the upper

Card 1/2

UDC: 550.831

L 08533-67

ACC NR: AP6035597

edge is on the observation surface, but local salt-dome data are disregarded. Data obtained on the deep-seated structure of Ciscaucasia indicate that the depths of vertical faults bounding deep-lying blocks of rocks with various densities coincide with the horizontal interfaces of the Earth's crust, the granitic roof, the Conrad discontinuity, the Mohorovicic discontinuity, and others not having worldwide extent. This pattern holds true for other regions of the USSR as well. This method of interpretation of gravity anomalies also makes it possible to determine the distribution and depths of deep-seated fault systems. Faults coincide with zones of maximum horizontal gravity gradients of  $\Delta g$  anomalies. In addition, since interpretation with the log-log charts yields not only the  $z_2$  values (depths of the lower edges), but also  $\Delta \sigma$  values (horizontal density variations) as well, it is also possible to determine the pattern of deep-lying density inhomogeneities and petrographic characteristics. Orig. art. has: 2 figures and 4 formulas.

SUB CODE: 08/ SUBM DATE: 30Nov65/ ORIG REF: 003/ ATD PRESS: 5103

Cord 2/2 egr

F.

CZECHOSLOVAKIA/Laboratory Equipment.

Abs Jour : Ref Zhur - Khimiya, No 16, 1958, 53647

Author : Markup, Gotfrid

Inst :  
Title : A Laboratory Device for Shaking Liquids.

Orig Pub : Chem. promysl., 1958, 8, No 1, 26.

Abstract : A brief description and the design are given.  
The amplitude and number of shakings can be changed over  
a wide range.

Card 1/1

6

ON CZECHOSLOVAKIA:

LEWINSKY, M.; KALINA, J.; TURKOVÁ, J.; Psychiatric Clinic, Faculty of Medicine, Charles University (Prague); Psychiatric Institute of the Ministry of Public Health (MPSR), Prague; Psychiatric Institute of Central Moravia and Silesian Institute of Public Health, Krajs of Central Bohemia and Silesia; Kralupy nad Vltavou District Hospital, Kralupy nad Vltavou; Psychiatric Hospital (Psychiatrica Lecka), Horni Berounice.

Psychiatric Hospital (Psychiatrica Lecka), Horni Berounice.  
Psychiatric Hospital (Psychiatrica Lecka), Horni Berounice.

"Intellectual Deficiency Connected with Mental Disorders."

"Acta Psychologica Bohemoslovaca, Vol 62, No 6, Oct 68, p 451-467.

Abstract: This article is a modified English summary of the original Czech article. The author describes the connection between developmental disturbances of children and disturbances of mental functions occurring simultaneously. No references. (Manuscript received 11 Sep 65).

4/1

MARKURYEVA, E. V., and STEPANOV, YF. B. (USSR)

"Investigation of Carbohydrates Bound with Serum Proteins in Patients with Chronic Coronary Deficiency and Myocardial Infarct before and after Bilateral Ligation of the Internal Thoracic Arteries."

Report presented at the 5th International Biochemistry Congress,  
Moscow, 10-16 Aug 1961

MARKUS, A.A.

Adjustment of multiple-jet burners manufactured by Moscow  
gasworks, Energetik, 13 no. 2:8-9 F '65. (MIRA 18:6)

MARKUS, A. M.

USSR/Physics - New Techniques  
Molecular Beam  
Capacitor (Condenser)

Sep 50

"Detection of a Molecular Bunch on the Basis of the Variation of a Capacitor's Electrical Conductivity," M. I. Korsunskiy, L. I. Pivovar, A. M. Markus, Physicotech Inst, Acad Sci Ukrainian SSR

"Zhur Eksper i Teoret Fiz" Vol XX, No 9, pp 860-861

Letter to editor reveals possibility of creating high-sensitivity detector of molecular rays, based on subject variation by measuring deposition, from beam under study, upon the condenser. Shows that conductivity of very thin metal films depends complexly on their thickness. Submitted 9 Feb. 50.

168T103

MARKS, A. V.

A. V. Marks, L. I. Liverov, T. N. Poloznyi. In: Journal of Macroeconomics, v. 19,

April 1997, p. 111-131.

CC: Journal of Macroeconomics, 2, 111-131, 1997.

Markus, A.M.

3838 ABC-45-2291  
DETERMINATION OF THE ABSORPTIVE CROSS SECTION  
FOR KINETIC LOSS BY ATOMIC ION COLLISIONS IN  
THE ENERGY RANGE 400 TO 1100 KEV. (M.T.)

Author(s): A. M. Markus, and D. L. P.

Institution(s): Physics Department, Institute of Nuclear Research (D.I.E.R.),  
1925 University Avenue, New Haven, Conn. 06520 (U.S.A.)

A study was made of the processes of electron loss by

electrons on the surfaces of singly charged  $H^+$  ions. Between  
energies of 400 and 1100 kev (approx. 400 to 1100 Mev).  
Values of the absorptive cross section obtained for various  
surfaces are given. It is found that processes change until an  
equilibrium was reached at high energies. A marked  
energy dependence was found. (D.E.R.)

(3) 100, 1000

Khar'kov Phys.-Tech. Sci. Res. Inst., A.S. USSR

MARKUS, A.M.

Shortcomings in the management of communications enterprises;  
materials from an examination of communications organs of the  
Maritime Territory. Vest.sviazi 16 no.11:24 N '56.

(MIRA 10:1)

1. Zamestitel' nachal'nika Inspeksii pri ministro svyazi RSFSR.  
(Maritime Territory--Telecommunication)

~~MARKUS, A.M.~~

~~Improve methods of checking the operations of communication enterprises. Vest. sviazi 17 no.12:21-22 D '57.~~ (MIRA 10:12)

1. Zamestittel' nachal'nika Inspeksi pri ministro svyazi RSFSR.  
(Telecommunication--Management)

*MARKUS*, A.M.

REV 1 BOOK INFORMATION

REF ID: A6200000000000000000000000000000

Avtomagazin. Pechatno-tekhnicheskij institut

Elektrostatische generatory atomit stany (Electrostatic Generators). Collection of articles) Moscow, Atomizdat, 1959. 275 p., 100 copies printed.

REVIEW: This collection of articles may be useful to scientists and engineers working with high-voltage electrostatic generators.

CONTENTS: The authors discuss the construction and operation of a number of electrostatic generators developed in the USSR and describe methods of generating negative hydrogen ions. They discuss the operation of accelerators and present methods of stabilizing accelerator voltages. No references are mentioned. References appear at the end of some articles.

Borodkin, A. M., A. K. Val'ev, N. E. Chernovskiy and B. P. Tarbin. High-frequency Sources for Electrostatic Generators  
The author presents the results of study conducted by PTI All Ukraine in 1954-1955 of factors affecting the ring discharge in hydrogen in a transverse magnetic field and those affecting the percentage of ions in a 10-50-Mc/sec frequency range and initial pressure in the discharge chamber of 1.5 mm Hg. He also discusses the construction and operation of a high-frequency ion source. There are 5 references.Borodkin, V. D., A. K. Val'ev, N. E. Chernovskiy and B. P. Tarbin. High-voltage Vertical-Orbital Electrostatic Generator  
The authors discuss the construction and operation of an electrostatic generator with a cross-shaped steel boiler and two horizontal tubes and describe the advantages of such a design over horizontal and vertical types of generators. There are 25 references; 8 Soviet, 13 English, 1 French and 1 Danish.Gorbulitskiy, G. M. Magnetic Analyzer as an Instrument for Measuring Voltages of an Electrostatic Generator  
The author discusses the use of a magnetic analyzer for measuring voltage of an electrostatic generator. He briefly explains the construction of the analyzer and describes the method of experimentally determining the degree of stabilization. There are no references.Gorbulitskiy, G. M. and I. A. Chernichenko. Voltage Stabilization of an Electrostatic Generator  
The authors discuss the construction and operation of a voltage-stabilization circuit and its elements such as a differential amplifier and a current article and describe the method of experimentally determining the degree of stabilization. There are no references.Pogorely, Yu. M., L. I. Sulyak and M. V. Shchegoleva. Ion Sources for Electrostatic Generators in a Computer System  
The authors discuss the requirements of ion sources for microelectronics. They also describe the construction of a magnetic ion source which could consist of a high-frequency source. They also discuss the experimental study of three sources conducted by PTI All Ukraine and describe the experimental results. There are 29 references; 9 Soviet, 10 English and 2 German.Pogorely, Yu. M., L. I. Sulyak, A. G. Korotayev and A. D. Timofeyev. Source of Negative Hydrogen Ions for an Overcharge Electrostatic Generator  
The authors describe the construction and operation of three models of negative hydrogen-ion sources developed by PTI All Ukraine and present the analysis of their characteristics. The first and the second models were developed in 1955 and 1956 respectively. The third model was built later, essentially a copy of that developed by Weinstock, J. A. and Cannon, J. E. of the University of Wisconsin, U. S. A. In the analysis of characteristics of these models the authors discuss the negative ion operation, methods of controlling the coefficient of transmission of positive ions negative ion beam and ion beam and ion loss phenomena. There are 9 references; 3 Soviet,Pruzhinskii, L. Z. Accelerating Tube of an Electrostatic Generator  
The author briefly discusses factors affecting the characteristics of an accelerating tube and describes processes occurring in the accelerating tube and intermediate electrode. He discusses the methods of calculating the potential distribution in the tube and the influence of the potential difference between the electrodes on the potential distribution in the tube. There are 10 references; 3 Soviet, 7 English.

MARKUS, A.S.

Gohberg, I. C. and Markus, A. S. On a characteristic property of the kernel of a linear operator. Dokl. Akad. Nauk SSSR (N.S.) 105 (1955), 893-896. (Russian)

Let  $A$  be a closed operator on a Banach space, and  $\Gamma$  a connected domain such that  $A - \lambda I$  has a bounded inverse for  $\lambda \in \Gamma$ . The authors prove that, given  $y$ , the equation  $Ax - \lambda x = y$  is solvable for all  $\lambda$  if and only if  $y$  is in the kernel of  $A - \lambda_0 I$  for some  $\lambda_0 \in \Gamma$ . The kernel of an operator is defined as the intersection, over all positive  $n$ , of the ranges of  $A^n$ . The kernels of  $A - \lambda I$  are the same for all  $\lambda \in \Gamma$ . If  $y$  is not in the kernel, the equation  $Ax - \lambda x = y$  is solvable for, at most, a set of isolated points in  $\Gamma$ . The authors state an extension of this result to operator functions  $A$ , analytic on  $\Gamma$ . *D. C. Kleinecke.*

Markus, A. S. On a characteristic property of the kernel of a linear operator. Dokl. Akad. Nauk SSSR (N.S.) 105 (1955), 1144-1146. (Russian)

The results of the paper reviewed above are extended to the case where the range of  $A - \lambda I$  is closed and the null space of  $A - \lambda I$  is finite dimensional. *D. C. Kleinecke.*

SUBJECT USSR/MATHEMATICS/Fun. anal. & analysis  
AUTHOR MARKUS A.S.  
TITLE On a characteristic property of the kernel of a linear operator.  
PERIODICAL Doklady Akad. Nauk 105, 1162-1166 (1955)  
reviewed 7/1956

CARD 1/2 PG - 161

Let  $A$  be a linear closed operator in the Banach space  $E$ . Let  $R(A)$  be the set of values of  $A$ ,  $L(A)$  the subspace of the solutions of  $Ax = 0$  and  $\alpha(A)$  the dimension of this subspace. Let  $\Gamma$  be a connecting component of the open set of all complex  $\lambda$  for which  $R(A-\lambda I)$  is closed and  $\alpha(A-\lambda I)$  is finite. Let  $\omega_0 = \min \alpha(A-\lambda I) = \infty$  and  $\Gamma'$  be the set of all  $\lambda \in \Gamma$  for which  $\alpha(A-\lambda I) = \omega_0$ . The author proves two theorems:

1. Let  $y$  be an element of  $E$ . Then there exists the alternatives: either the equation  $Ax - \lambda_0 x = y$  is solvable for all  $\lambda \notin \Gamma'$  or it is solvable at most for an isolated point set  $\lambda \in \Gamma'$ .
2. Let  $\lambda_0$  be an arbitrary point of  $\Gamma$ . In order that the equation  $Ax - \lambda_0 x = y$  is solvable for all  $\lambda \in \Gamma$ , it is necessary and sufficient that  $y$  is an element of the kernel of the operator  $A - \lambda_0 I - B$ . The proof bases on the lemma: Let  $\lambda_1, \lambda_2, \dots$  be a sequence of points of  $\Gamma$  which converges to  $\lambda_0 \in \Gamma$ , let be  $\lambda_n \neq \lambda_0$  and  $y$  be an element of  $E$ . If  $A - \lambda_n I - y$  is solvable for all natural  $n$ , then there exists a number  $K > 0$  such that the equation

Doklady Akad. Nauk 105<sub>a</sub> 1144-1145 (1981)

CARD 2/2 PG - 162

$Ax - \lambda x = y$  is solvable for all  $x$  if and only if  $\lambda$  is in the spectrum of  $A$ .  $\square$   $\square$   $\square$ .

MARKUS A.S.

CARD 1/3 PG - 771

SUBJECT

USSR/MATHEMATICS/Functional analysis

AUTHOR

GOCHBERG I.Z., MARKUS A.S.

TITLE

On the stability of some properties of normally solvable operators.

PERIODICAL

Mat.Sbornik, n.Ser. 40, 453-466 (1956)  
reviewed 5/1957

Let  $A$  be an additive closed operator in the Banach space  $E$ . Let  $\mathcal{A}(A)$  be its region of definition and  $R(A)$  its range of values. Let  $L(A)$  be the subspace of the solutions of  $Ax = 0$ . Let  $\alpha(A) = \dim L(A)$ , let  $\beta(A) = \dim E/\overline{R(A)}$  be the defect index of  $A$ . Let  $A$  be normally solvable, i.e. for the solvability of the equation  $Ax = y$  it is necessary and sufficient that  $l(y) = 0$ , where  $l$  is an arbitrary functional in  $E$  for which  $lA = 0$ . The pair of numbers  $(\alpha(A), \beta(A))$  is called the defect characteristic (or d-characteristic) of  $A$ . If the d-characteristic is finite, then  $\gamma(A) = \alpha(A) - \beta(A)$  is called the index of the operator  $A$ . A linear bounded operator  $M$  is called regularizing for the operator  $A$  if for a completely continuous operator  $T$  and all  $x \in \mathcal{A}(A)$  holds:

$$Mx = x + Tx.$$

Theorem 1: Let the d-characteristic of the normally solvable operator  $A$  be finite. Let  $B$  be an arbitrary linear bounded operator, where  $B^n$  is completely continuous for a certain natural  $n$ . Let for  $A$  exist a regularizing operator  $M$  such that  $MB = BM$  is completely continuous. Then  $A + B$  is normally solvable,

Mat.Sbornik,n.Ser. 40, 453-466 (1956)

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has a finite d-characteristic and  $\chi(A + B) = \chi(A)$ .  
**Theorem 2:** Let  $A$  be normally solvable and have a finite d-characteristic.  
 n be a natural number. Let an arbitrary linearly bounded operator  $B$

satisfy the condition  $\|B^n\| < \beta(n)$  and for  $A$  let exist the regularizing operator  $M$ , where  $MB - BM$  is completely continuous. Then  $A + B$  is normally solvable, has a finite d-characteristic and  $\chi(A + B) = \chi(A)$ .  
 Let  $K(A)$  be the subspace which is formed by the elements of the kernel of  $A$ ,

let  $m(A) = \dim \{L(A) \cap K(A)\}$ .

**Theorem 3:** Let  $A$  be normally solvable, the d-characteristic be finite and  $\chi(A) = 0$ ,  $m(A) = 0$ . Then  $A + B$  is normally solvable too, its d-characteristic is finite and  $\chi(A + B) = m(A + B) = 0$  for every operator  $B$  commuting with  $A$ , for which for a natural  $n$  one of the conditions

$$\|B^n\| < \frac{1}{\|A_0^{-n}\|} \quad \text{or} \quad B^n \text{ completely continuous}$$

is satisfied.

**Theorem 4:** Let  $A$  be normally solvable,  $m(A) = \alpha(A)$  finite. Then there exists a positive  $\beta$  such that for every linear bounded operator  $B$ ,  $\|B\| < \beta$

Mat.Sbornik,n.Ser. 40, 453-466 (1956)

CARD 3/3

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commutating with A, the operator  $A + B$  is normally solvable too and  
 $m(A + B) = \alpha(A + B) = \alpha(A) = m(A)$ . Here the manifold of the kernel of  
 $A + B$  is identical with the manifold of the kernel of A.

INSTITUTION: Bjelzy-Kisenev.

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COV/44-59-1-575

~~16(1) 16.4600~~

Translation from : Referativnyy zhurnal. Matematika, 1959, Nr 1, p 117 (USSR)

AUTHOR: Markus, A.S.

TITLE: On a Property of the Kernel of a Linear Operator

PERIODICAL: Uch.zap.Kishenevsk. un-ta, 1957, 29, 25 - 28

ABSTRACT: Let  $A$  be a linear closed operator in the Banach space  $E$ . Let  $\emptyset$  denote the connected component of the set of all complex numbers  $\lambda$  for which the operator  $A - \lambda I$  is normally solvable and the equation  $(A - \lambda I)x = 0$  possesses finitely many linearly independent solutions. Let  $N(A - \lambda I)$  be a finite-dimensional subspace, the basis of which consists of zero elements of the finite lines of the canonical table of the zero elements of the operator  $A - \lambda I$  (Referativnyy zhurnal. Matematika, 1955, 3845; 1956, 5972). It is  $N(A - \lambda I) = 0$  everywhere in  $\emptyset$ , at most except a certain set  $\Gamma$  consisting of isolated points.

$K(A - \lambda I) = \bigcap_{j=1}^{\infty} (A - \lambda I)^j E$  is denoted as the kernel of the operator.

It is proved that for all  $\lambda \in \emptyset$  the direct sum  $K(A - \lambda I) + N(A - \lambda I)$

Card 1/2

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On a Property of the Kernel of a Linear Operator

is constant (i.e. it does not depend on  $\lambda$ ). For the points  $\lambda \in \Phi - i\mathbb{R}$  this theorem was formerly found by the reviewer and the author (Referativnyy zhurnal Matematika, 1956, 6686, 6687). In the second paragraph a generalization of the above formulated theorem is given.

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SOV/44-59-1-575

I.Ts. Gokhberg

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Card 2/2

AUTHOR: Markus, A.S.

20-119-6-11/56

TITLE: On Holomorphic Operator Functions (O golomorfnykh operator-funktsiyakh)PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 119, Nr 6, pp 1099-1102 (USSR)ABSTRACT: The author generalizes some results of Gohberg and Kreyn [Ref 1,2] and uses in general their terminology. Let G be an open connected domain of the complex plane and  $A_\lambda$  an operatorfunction holomorphic in G, the values of which are linear closed operators from the complex Banach space  $\mathcal{X}_1$  into another Banach space  $\mathcal{X}_2$ . Let  $\lambda_0$  be an arbitrary point in G, and  $A_{\lambda}$  is assumed to admit for  $|\lambda - \lambda_0| < \varrho$  ( $\varrho > 0$ ) the expansion

$$A_\lambda = A_{\lambda_0} + \sum_{i=1}^{\infty} (\lambda - \lambda_0)^i c_i$$

which is convergent with respect to the operator norm. Furthermore let  $\mathcal{Z}(A)$  denote the set of all solutions of  $Ax=0$ , and let  $\alpha(A)$  be the dimension of  $\mathcal{Z}(A)$ . Consider an arbitrary vector  $x_0 \in \mathcal{Z}(A_{\lambda_0})$ . Let  $\mu(x_0, A_{\lambda_0})$  denote the highest of the nonnegative

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## On Holomorphic Operator Functions

integers  $\mu$ , for which the vectors  $x_{\mu_0} = x_0, x_{\mu_1}, x_{\mu_2}, \dots, x_{\mu_k}$  exist,

so that  $\sum_{i=0}^k c_i x_{\mu_i, k-i} = 0$ , where  $c_0 = \lambda_0$  and  $k=0, 1, \dots, \mu$ . If

among these numbers there exists no highest one, then let be  
 $\mu(x_0, \lambda_0) = \infty$ . Let the set of all vectors  $x \in \mathcal{Z}(\lambda_0)$ , for which

$\mu(x, \lambda_0) = \infty$ , be denoted with  $\mathcal{M}(\lambda_0)$  and its dimension with  
 $n(\lambda_0)$ . Let  $B(\lambda)$  be the defect number of the operator  $A$ . If  
 $\alpha(A)$  is finite,  $B(A)$  infinite and  $A$  normally solvable, then a  
linear closed operator  $A$  is called a  $\Phi_+$ -operator; if, how-  
ever,  $B(A)$  is finite and  $\alpha(A)$  infinite, then it is called a  
 $\Phi_-$ -operator.

Now it holds the following generalization of the theorem of  
Gokhberg - Kreyn:

Theorem: For each point  $\lambda \in G$  let  $A_\lambda$  be a  $\Phi_+$  (or  $\Phi_-$ )-operator.  
Then it exists a set  $\Gamma \subset G$  so that  $G - \Gamma$  is isolated in  $G$  and  
that the function  $\alpha(A_\lambda)$  for all  $\lambda \in \Gamma$  is constant:  $\alpha(A_\lambda) = \alpha_0$ .  
If, however,  $\lambda \in G - \Gamma$ , then it is  $\alpha(A_\lambda) > \alpha_0$ . Furthermore for

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## On Holomorphic Operator Functions

all  $\lambda \in G$  the function  $n(A_\lambda)$  is constant:  $n(A_\lambda) = \alpha_0$ .

Theorem: For all  $\lambda \in G$  let  $A_\lambda$  be a  $\phi_-$ -operator. Then there exists a set  $\Gamma \subset G$ , so that  $C - \Gamma$  is isolated in  $G$ , and that for all  $\lambda \in \Gamma$  it holds:  $B(A_\lambda) = B_0$ . If, however,  $\lambda \in C - \Gamma$ , then it is  $B(A_\lambda) > B_0$ . Furthermore it is  $M(A_\lambda) = Z(A_\lambda)$  for all  $\lambda \in \Gamma$ .

There are 7 references, 4 of which are Soviet, and 3 Hungarian.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

PRESENTED: December 6, 1957, by V.I.Smirnov, Academician

SUBMITTED: November 22, 1957

Card 3/3

MARTIN, J. C., JR. - "A Theory of  
Theory of Completely Bounded  $\sigma$ -operators on Banach Algebras," J. Math.  
of the Royal Soc. London, 1955, 26, 103-116.

~~GOKHBERG, I. TS., MARKUS, A. S.~~

Characteristic properties of some spectrum points of linear limited operators. Izv. vys. ucheb. zav.; mat no.2:74-87 '60.  
(MIR 13:7)

1. Bel'tskiy pedagogicheskiy institut.  
(Operators (Mathematics))

AUTHOR: Markus, A.S.

6/020/00/122/03/11/068

TITLE: A Basis of Root Vectors of a Dissipative Operator

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3, pp. 524-527

TEXT. Let  $A$  be a linear operator in the separable Hilbert space  $\mathcal{H}$ . The vector  $x$  is called a root vector of  $A$  which corresponds to the number  $\lambda$  if there exists a natural number  $n$  so that  $(A - \lambda I)^n = 0$ . The operator  $A$  is called dissipative if  $\text{Im } (Ax, x) \geq 0$  for all  $x \in \mathcal{H}_A$ . In five theorems the author gives several conditions under which a dissipative operator has a basis of root vectors. At the All Union Conference on Functional Analysis in Baku (1959) the author reported about the results of the paper. The author mentions B.R. Mukminov, I.M. Glazman, M.S. Livshits, N.K. Bari, and M.K. Page; he thanks V.G. Kreyn and I.Ts. Gokhberg for hints. There are 8 Soviet references.

ASSOCIATION: Moldavskiy filial Akademii nauk SSSR (Moldavskiy Affiliate Institution AS USSR)

PRESENTED: January 21, 1960, by A.N. Kolmogorov, Academician

SUBMITTED: December 23, 1969

Card 1/1

MARKUS, A.S.

Expansion in root vectors of a slightly disturbed self-adjoint operator. Dokl. AN SSSR 142 no.3:538-541 Ja '62. (MIRA 15:1)

1. Institut fiziki i matematiki Moldavskogo filiala Akademii nauk SSSR. Predstavлено академиком A.N.Kolmogorovym.  
(Operators (Mathematics)) (Vector analysis)

MARKUS, A.S.

Eigenvalues and singular numbers of the sum and product of linear operators. Dokl. AN SSSR 146 n.1:34-36 S '62. (MIRA 15:9)

1. Institut fiziki i matematiki AN Moldavskoy SSR. Predstavлено академиком П.С. Александровым.  
(Operators (Mathematics))

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7

GOKHBERG, I. B.; MARKUS, A. S.

Stability of bases of Banach and Hilbert spaces. Izv. Ak. Nauk.  
SSR no. 5:17-35 '62. (MFA 1971)

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7"

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7

MARKUS, A.S.

Eigenvalues and singular values of sums and products of  
linear operators. Msp. mat. nachr. 19 no. 1:93-123. 1954.  
(MTR 17:10)

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032520010-7"

TOKHEPG, I.TS.; MARKIN, A.S.

Some inequalities between eigenvalues and matrix elements  
of linear operators. Izv. AN Mold. SSR no.5, 1981, p. 162.  
(Mold. Rep.)

MARKUS, A.S.

Comparability of openings in normed space. Izv. AN Mold. SSR  
(MIRA 18:3)  
no.1:75-76 '63.

GOKHBERG, I.TS.; MARKUS, A.S. (Kishinev)

Some relations between eigenvalues and the matrix elements  
of linear operators. Mat. sbor. 64 no.4:481-496 Ag 'č4.  
(MIRA 17:11)

MARKUS, A.S.

Certain indications of the completeness of a system of root vectors of a linear operator and the summability of series over this system. Dokl. AN SSSR 155 no. 4:753-756 Ap '64.  
(MIRA 17:5)

1. Institut fiziki i matematiki AN Moldavskoy SSSR. Predstavлено  
академиком М.В.Кельдышем.

VIZITEY, V.N.; MARKUS, A.S. (Kishinev)

Convergence of multiple expansions of a system of eigen-  
vectors and adjoint vectors of a bundle of operators.

Mat. sbor. 66 no.2:287-320 F '65.

(MIRA 18z4)

MARKUS, A.S.

Multiple completeness and the convergence of multiple expansions  
in a system of eigenvectors and adjoint vectors of a bundle of  
operators. Dokl. AN SSSR 163 no. 5:1061-1064 Ag '65.

(MTR 18:8)

1. Institut matematiki i mehaniki im. I. I. Mechnikova AN Moldavskoy SSR.  
Submitted January 27, 1965.

BOCHAROV, Yu., arkitektor; MARKUS, B., arkitektor; TAZHIYEVA, L.,  
arkitektor; BORUNOV, S., inzh.

Development of the structures of an industrial city. Ekspres.  
(MIRA 18:9)  
proekt. no.5:77-87 '62.

GLUKHOVSKOY, K.A.; KRYLOV, N.A.; KRONROD, A.A., inzh., nauchn. red.;  
MARKUS, B.M., red.; KUZ'MINA, N.V., tekhn. red.

[Nondestructive methods of testing materials] Nerazrui-  
shaiushchie metody ispytaniia materialov; materialy k  
Vserossiiskomu soveshchaniyu po prostranstvennym kon-  
struktsiam. Leningrad, Izd. ot-za tekhn.informatsii tes-  
sta "Leningradorgstroi," 1962. 71 p. (MIRA 16:8)

1. Leningrad. Upravleniye po zhilishchnomu i grazhdanskому  
stroitel'stvu.

(Nondestructive testing)

KHGOROSTYANNIKOV, Mikhail Dmitriyevich; MARKUS, B.M., red.;  
ALABYSHEVA, N.A., red.izd-va; BELOGUROVA, T.A., tekhn.  
red.

[New form of wage organization in construction assembly  
brigades; practice of the Main Administration for Hous-  
ing and Public Construction of the City of Leningrad]  
Novaia forma organizatsii oplaty truda v brigadakh konech-  
noi produktsii; opyt Glavleningradstroia. Leningrad, 1963.  
14 p. (Leningradskii dom nauchno-tehnicheskoi propagandy.  
Obmen peredovym opyтом. Seria: Stroitel'noe proizvodstvo,  
no.4) (MIRA 16:12)  
(Leningrad—Wages—Construction workers)

PERSHIN, Mikhail Alekseyevich; MIGUKIN, Aleksandr Timofeyevich;  
KIM, Leonid Vasil'yevich; TSYBAYEV, Igor' Gennad'yevich;  
MAKKUS, b.M., red.; ALABYNSHEVA, N.A., red.izd-va; GVERTS,  
V.L., tekhn. red.

[Movable tool-repair shops on city-block construction sites]  
Peredvizhnye instrumental'no-remontnye masterskie na ob"-  
ektakh kvartal'noi zastroiki; opyt raboty Glavleningradstroia.  
Leningrad, 1963. 15 p. (Leningradskii dom nauchno-tekhniches-  
koi propagandy. Seriia: Stroitel'noe proizvodstvo, no.5)  
(MIRA 16:12)

(Leningrad--Construction equipment--Maintenance and repair)

MIKLASHEVSKIY, Anatoliy Ivanovich, kand. khim. nauk; MARKUS, E.M.,  
red.

[New method of finishing exterior and interior walls of  
buildings; thermodecoration] Novyi sposob otdelki naruzh-  
nykh i vnutrennikh sten zdani; termodekorirovanie. Le-  
ningrad, 1964. 25 p. (MIRA 18:3)

ZINOV'YEV, Anatoliy Yakovlevich; MARKUS, B.M., red.

[New types of joints for precast reinforced concrete  
and mesh-reinforced concrete elements] Novye vidy soedi-  
nenii sbornykh zhelezobetonykh i armotsementnykh kon-  
struktsii. Leningrad, 1965. 25 p. (MIRA 18:5)

MARKUS, C., Dr.; NAGY, A., dr.; BARBU, Z., prof.

Ballistocardiograms, phonocardiograms and radiotograms of patients with pulmonary diseases preceding "cor pulmonale". Med. intern., Bucur 12 no.12:1851-1856 D '60.

1. Lucrare efectuata in Clinica medicala (conductor: prof. Doczy Pal) si in Clinica de fiziologie (conducator: prof. Zeno Barbu) ale I.M.F. Tg.Mures.  
(BALLISTOCARDIOGRAPHY) (PHONOCARDIOGRAPHY)  
(PULMONARY HEART DISEASE diagnosis)  
(LUNG DISEASES complications)

MARKUS, D.

Experiments of association with species of wild grass. p. 363.  
(Magyar Nemzeti Múzeum Természettudományi Múzeum Szemle, Vol. 7, 1951,  
Budapest, Hungary)

SO: Monthly List of East European Accessions (ERA) No. 6, Sept., 1951. "Incl.

MARKUS, Dusan, inz. (Beograd, Zmaja od Noćaja 13/2)

Determining the degree of utilized power in the direct-current  
electric machines by the opposition method. Tehnika Jug 17  
no.7:Suppl.: Elektrotehnika 11 no.7:1333-1350 J1 '62.

1. Asistent u Institutu za nuklearne nauke "Boris Kidrić",  
Beograd-Vinca.

1-17498-63

KWP(q)/HIS AFFTC/ASD JD

ACCESSION NR: AP3001443

Z/0034/63/000/006/0454/0454

52

AUTHOR: Markus, F.TITLE: Apparatus for pouring of steel in an inert gas atmosphereSOURCE: Hutzenbachen, no. 6, 1963, 454TOPIC TAGS: steel pouring, inert gas atmosphere, steel pouring apparatus

ABSTRACT: The article is an abstract of the Czech patent application PV 5121-61. The device is shown in Fig. 2 of Enclosure 1. It is fixed to the pouring vessel (1), from which steel is poured under a protective gas curtain, which is shaped (17) into a cylinder or a cone. The pouring nozzle is protected by a cylinder formed, in part, by the upper ring (1), provided in its lower portion with a circular ridge (2) which has openings leading to the nozzle; the other part is formed by the lower ring (3) which has openings leading to the nozzle; this ring can move along the axis. Its inner section is cylindrical while the outer is conically shaped; it sits on an isolating pipe (6) with openings (7) connecting with openings in the upper ring (4) described above. (9) is the opening between the rings, (11) are holders, (13) segments with lines (18) for attaching the device, (15) is the flowing metal, (16) protecting

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conical cover, (17) inlet of protecting inert gas. Part of the gas enters through opening (7) tangentially to the molten metal and in this way it surrounds and protects it without creating a spray or cooling the metal. The opening (9) is adjustable to allow the introduction of the optimum quantity of gas. The invention prevents the contact of oxygen with the metals using a lower amount of an inert gas than was previously possible and has the advantage that it may be attached to the pouring vessel only shortly before the pouring takes place. Orig. art has: 1 figure.

[Abstracter's note: essentially complete translation.]

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C-1 2/51

MARKUS, Ferenc, dr.; LORINC, Pal, dr.

Simultaneous excretory and retrograde cholangiocholecystography.  
Magy. sebeszet 9 no.1r78-80 Feb 56.

1. A Szabolcs utcai Allami Kórház (igazgató: Boleschall Frigyes dr., az orvostudományok kandidátusa) sebészeti osztályának (főorvos: Molnár Béla dr., az orvostudományok kandidátusa) és rentgen intézetének (főorvos: Boris Alfred dr.) koslomenye.

(BILIARY TRACT, radiography  
cholangiocholecystography, simultaneous excretory &  
retrograde method, diag. value (Han))

MARKUS, Ferenc

Activity of the Ministry of Metallurgy and Machine Industry in  
the field of instrumentation and automation. Elelm ipar 18 no.8/9:  
231-233 Ag-S '64.

1. Secretariat of Automation, Ministry of Metallurgy and Machine  
Industry, Budapest.

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S/141/60/003/03/0C8/014  
E192/E382AUTHOR: Markus, F.A.TITLE: ✓ Determination of the Correlation Function for the  
Refractive-Index Fluctuations By Means of a LensPERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,  
1960, Vol 3, No. 3, pp 425 - 431

TEXT: An ideal lens can be used as a device for determining the correlation function of the refractive-index fluctuations when the scattering volume is studied in the Fraunhofer diffraction region with respect to the aperture of the lens. In the following, an attempt is made to calculate the average square value of the field or the illumination of the focal plane of the lens for the case when the non-homogeneities of the medium are situated in the region of the geometrical optics with respect to the lens aperture. In this case, the illumination of the focal plane can be related to the correlation function of the refractive index by a comparatively simple formula. For the purposes of analysis, it is assumed that a plane wave traverses a path  $L$  in a non-homogeneous medium and then impinges on the lens. The refractive index of the medium is defined by:

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Determination of the Correlation Function for the Refractive-index  
Fluctuations by Means of a Lens

$$n = n_o + \mu(x, y, z)$$

where  $n_o = \bar{n}$  is the average value of the refractive index and  
 $\mu$  is a random function describing the fluctuation of the  
index.

Further, it is assumed that the medium is stationary in time, it  
is statistically homogeneous and isotropic and the fluctuations of  
the refractive index are small in comparison with its average value.  
In order to evaluate the field at a certain point  $P$  in the focal  
plane of the lens (Fig. 1), it can be assumed that all the paths  
from the source to the image are optically equal. Consequently,  
for calculating the field at point  $P$  it is possible to construct  
an auxiliary plane  $\sigma$  perpendicular to the vector  $\underline{OP}$  (Fig. 1).  
The field is therefore given by:

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Determination of the Correlation Function for the Refractive-index  
Fluctuations by Means of a Lens

$$\mathbf{E}_p = \int_{\sigma}^1 \frac{1}{i\lambda F_p} \mathbf{E}(X, Y, Z) d\sigma$$

where X, Y, Z are the coordinates of an arbitrary point on the plane  $\sigma$ . The field  $\mathbf{E}$  can be evaluated from the first equation on p 427. If  $\mathbf{E} = \mathbf{E}_0 + \mathbf{E}_1$ , where  $\mathbf{E}_1$  denotes a perturbation,  $\mathbf{E}_1$  can be determined from:

$$\nabla^2 \mathbf{E}_1 + n_o^2 k_o^2 \mathbf{E}_1 + 2\mu n_o k_o^2 \mathbf{E}_0 = 0.$$

By employing the solution of this equation and assuming that the incident wave is described by

$\mathbf{E}_0 = A_0 e^{ik_z z}$  a formula for  $\mathbf{E}_p$  is derived; this is shown on p. 427. The final expression for  $\mathbf{E}_p$  is given

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Determination of the Correlation Function for the Refractive-index Fluctuations by Means of a Lens

by the first equation on p.428. The average square of the field or the illumination at the focal plane of the lens is expressed by the second equation on p.428, where  $\mu_1 \mu_2$  is the correlation function of the

refractive index. The average square of the field can be expressed as a sum of two integrals. The first of these is defined on p 428; the final expression for the second integral is given by the last equation on p 429. If  $w^* \gg 4\pi/L$ , the illumination of the focal plane is expressed by the second equation on p 430. There are 2 figures and 2 Soviet references.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet (Gor'kiy State University)

SUBMITTED: February 17, 1959

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GORELIK, Gabriel' Semenovich[deceased]; LYUBINA, Aleksandra Grigor'yevna;  
MARKUS, F.A., otv. za vypusk

[Inertial and noninertial recording systems in mechanics] Inertsial'nye i neinertsial'nye sistemy otcheta v mekhanike; uchebnoe posobie dlia studentov. Gor'kii, Gor'kovskii gos. univ. im. N.I. Lobachevskogo, 1962. 46 p.  
(MIRA 15:12)  
(Mechanics)

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AUTHOR: Bogdanov, A. A.; Brusin, I. Ya.; Yemelin, V. V.; Zverev, V. A.; Lyubina, A. G.; Markus, F. A.; Salenikovich, Ye. Yu.; Cheremukhin, A. M.; Shisharin, A. V.

TITLE: The diffractometer as an instrument which uses the diffraction phenomenon for multichannel spectral or correlation analysis of random processes

SOURCE: Vsesoyuznyy simpozium po difraktsii voln. 3rd, Tbilisi, 1964. Referaty dokladov. Moscow, 1964, 242-243

TOPIC TAGS: diffraction pattern, random process, spectrum determination, Fraunhofer line, optical information processing

ABSTRACT: Various types of optical equipment may be used for both successive and parallel analysis of the spectra and correlation functions of transparent objects. The diffractometer is one of the instruments which may be used in this manner. The spectra or correlation functions for a large number of processes can be determined simultaneously by observing the Fraunhofer diffraction pattern from individual transparent objects or combinations of objects. For instance, the spectra and correlation functions may be found for diffraction processes recorded as lines of variable density on a photographic film. In this method, the maximum number of

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simultaneously operating channels depends on the quality of the optical system and the film. In actual practice, the instrument can handle a great deal of information in a comparatively short period of time, which gives it a considerable advantage over electronic devices and even over digital computers. The instrument may also be used for signal separation and for detecting weak signals against a noisy background. The resolution and dynamic range, determined for sinusoidal signals, depend on the size of the "window" in the optical system and on the quality of the readout system. The instrument may be used as an optimum matched filter for detecting a special form of signal. In this case, the Fresnel diffraction pattern is used. "Film noises" (amplitude and phase distortions in the light wave which appear after passage through a uniformly fogged film) limit both the resolution and the dynamic range of the device. [14]

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